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ABSTRACT

Four significant data analyses have been made of 6,622 adult titles selected at random from the collections of 20 United States public libraries. An inductive quality estimate was determined by counting the times each was listed in up to eight evaluation guides. The analyses show that: (1) although there is a positive and significant relationship between the age of these titles and the number of tools in which they are listed, the relationship is not very strong; (2) although there is a positive and statistically significant relationship between the number of tools in which they are listed and the number of copies of these titles held by the 20 libraries, the relationship is weak; (3) the number of copies per title is relatively uniform in all Dewey classes; and (4) the number of titles found in each evaluation tool differed widely between the various main Dewey classes. (Author/RAA)

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SECONDARY ANALYSIS OF DATA ON A SAMPLE OF ADULT TITLES IN THE HUMANITIES HELD BY 20 UNITED STATES PUBLIC LIBRARIES

by

Herbert Goldhor

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Secondary Analysis of Data on a Sample of Adult Titles in the Humanities Held by 20 United States Public Libraries

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In 1977, a study was done for the National Endowment for the Humanities on the number and quality of adult non-fiction books in the humanities in a sample of United States public libraries (1). In writing the report of that study, some further analyses suggested themselves but could not then be done. Furthermore, that final report was based on holdings reported by only 19 of the 20 libraries in the sample. The information from the last library was received too late for inclusion in that report but has now been processed, and data for 6622 titles from all 20 libraries have been analyzed for this present statement, compared with 6412 titles from 19 libraries in the earlier document.

Briefly, the procedure followed in gathering and processing the data was as follows. A paid representative in each of the local libraries measured the shelf list for adult nonfiction, and drew off a random sample of entries from the specified sections of the Dewey decimal classification. The subject areas from which titles were drawn, and the Dewey decimal classes for each, are these:

Philosophy: 100-129, 140-149, 160-199
Comparative religion: 291-291.9
Law: 340-349
Language: 400-499
History, theory and criticism of the arts: 701.18
709, 720.9, 730.9-.92, 741.09-.92, 759.99, 769.9,
770.9-.92, 780.9, 792.09
Literature: 800-899
History: 900-909, 930-999

In the 6 libraries serving fewer than 25,000 persons (Group A), this sample was to be at least 100 titles; in those 5 serving from 25,000 to 100,000 (Group B), 200 titles; in 4 with 100,000 to 500,000 people (Group C), 400 titles; and in 5 with over 500,000 people (Group D), 600 titles. When the records for these titles were received and reviewed, each title was checked in several book reviewing

journals, book selection tools, and retrospective bibliographies. This inductive method of evaluating a library's book collection rests on the premise that a good book is one which has been approved and recommended by reviewers, editors, and compilers of bibliographies (2).

Sec. 1. Publication Date and Assessment of Quality

We shall here consider four main questions. The first is whether this inductive method of book collection evaluation is slanted in favor of older books; in other words, is there a statistically significant association between the date of publication of these books and the number of book evaluation tools in which they were found listed? Table 1 shows the basic data for all 20 libraries. The final column indicates the average number of book evaluation tools in which were found all titles published in the designated years. These averages increase sharply from before 1931 to 1942-51, and then decrease steadily for the next 25 years (1952-1976). Similarly the last row of Part A of Table 1 shows the median year of publication of all titles found in the designated number of tools. Those found in 4 to 8 tools have lower medians; those in one or two tools have higher.

Book selection tools and retrospective bibliographies by definition focus on other than the most current titles, and classics which are likely to be listed in such tools are almost always older titles. The numbers of such books in the lower right corner of the table are smaller by far than those in the upper left. One remarkable thing is the number of titles in the lower left corner, i.e., older titles found in none or very few book evaluation tools. Those in the bottom three rows of the first two columns are more than twice the number in the last two columns of the same rows. There are also a considerable number of titles in the upper right corner, i.e., recent publications found in multiple evaluation tools. The total number of titles in the first three rows of the last two columns exceeds the number in the last three rows of those same two columns by a ratio of 1.4 to

Table 1. Number of Titles Published in Specified Years and Distributed by the Number of Book Evaluation Tools in Which They Were Found Listed

Year of Publication	Number of Book Evaluation Tools								Mean No. of Tools
	0	1	2	3	4	5	6-8	Total	
Part A. Original Data									
1972-76*	249	222	253	256	187	61	9	1237	2.10
1967-71	271	234	369	344	189	74	34	1515	2.20
1962-66	164	188	223	277	203	128	64	1247	2.65
1952-61	165	154	194	241	189	130	89	1162	2.76
1942-51	64	56	66	98	109	75	29	497	2.96
1932-41	45	40	46	68	45	39	17	300	2.72
To 1931	216	87	104	95	63	36	21	622	1.83
Total	1174	981	1255	1379	985	543	263	6580	2.45
Median Year	1965	1966	1966	1965	1964	1961	1959	1965	

*Including two titles published in 1977.
Note: This table omits 42 titles with no known publication date.

Part B. Column Percentages								
1972-76	21%	23%	20%	19%	19%	11%	3%	19%
1967-71	23	24	29	25	19	14	13	23
1962-66	14	19	18	20	21	24	24	19
1952-61	14	16	15	17	19	24	34	18
1942-51	5	6	5	7	11	14	11	8
1932-41	4	4	4	5	5	7	6	5
To 1931	18	9	8	7	6	7	8	9
Total	100%	100%	100%	100%	100%	100%	100%	100%
Part C. Row Percentages								
1972-76	20%	18	20	21	15	5	1	100%
1967-71	18%	15	24	23	12	5	2	100%
1962-66	13%	15	18	22	16	10	5	100%
1952-61	14%	13	17	21	16	11	8	100%
1942-51	13%	11	13	20	22	15	6	100%
1932-41	15%	13	15	23	15	13	6	100%
To 1931	35%	14	17	15	10	6	3	100%
Total	18%	15	19	21	15	8	4	100%

Part D. Reduced to Two Rows and Two Columns

	0-2	3+	Total	0-2	3+	Total
1967-76	1598	1154	2752	47%	36%	42%
To 1966	1812	2016	3828	53	64	58
Total	3410	3170	6580	100%	100%	100%

1 df, X^2 = 73.42, $p < .001$ phi = .10

1 df, X^2 = 81.70, $p < .001$ gamma = .22

one. Note too that no cell is empty, indicating a wide dispersion of titles by publication date when distributed by the number of tools in which they were found listed.

To get a statistical measure of the association between date of publication and number of tools, we compressed the original data of Table 1 into a 2 X 2 form (Part D). We applied chi-square both to the raw data and in percentage form (since chi-square increases as the numbers in the raw data get larger), and got very much the same results, a difference significantly greater than could be explained by chance alone with relatively low measures of the strength of this association between publication date and number of tools (3). Somewhat different results are gotten if other division points for the four cells are used; we used those division points which overall gave the most nearly equal halves of the raw data. We conclude that there is a tendency for these two variables to be associated but that it is far from complete or overwhelming.

The next question is whether this association holds equally for each size group of libraries. Tables 2-5 show that, in general, the answer is "yes" with some variation in the strength of the relationship. In all four population size groups, there is no empty cell in the original data (possibly because the tables are reduced from 7 X 7 to 6 X 3). In each one, the mean number of tools increases directly with the age of the books (sometimes erratically) and then decreases. In each case, the median year of publication of the titles found in three or more tools is less than the median for books found in one or two tools.

In every case, the 2 X 2 compression results in a distribution which is significantly different from what sampling variations alone would produce, but phi and gamma go no higher than .33 (and as low as .07). In a 2 X 2 table, phi is the same as a correlation coefficient, and phi squared is the percentage of variance in the dependent variable (the assessment of quality) which is explained by variations in the independent variable (year of publication); in Tables 1-5, phi squared is never more than 3%.

Table 2. Number of Group A Titles Published in Specified Years and Distributed by the Number of Book Evaluation Tools in Which They Were Found Listed

Year of Publication	Number of Tools 0	1-2	3+	Total	Mean No. of Tools
Part A. Original Data					
1972-76	12	44	60	116	2.75
1967-71	29	56	64	149	2.37
1962-66	14	22	63	99	2.99
1952-61	12	30	93	135	3.21
1932-51	10	21	63	94	3.14
To 1931	15	20	29	64	2.38
Total	92	193	372	657	2.81
Median:	1965	1967	1962	1963	
Part B. Column Percentages					
1972-76	13%	23%	16%	18%	
1967-71	32	29	17	23	
1962-66	15	11	17	15	
1952-61	13	16	25	21	
1932-51	11	11	17	14	
To 1931	16	10	8	10	
Total	100%	100%	100%	100%	
Part C. Row Percentages					
1972-76	10%	38	52	100%	
1967-71	19%	38	43	100%	
1962-66	14%	22	64	100%	
1952-61	9%	22	69	100%	
1932-51	11%	22	67	100%	
To 1931	23%	31	45	100%	
Total	14%	29	57	100%	

Part D. Reduced to Two Rows and Two Columns

	0-2	3+	Total	0-2	3+	Total
1967-76	141	124	265	49%	33%	40%
To 1966	144	248	392	51	67	60
Total	285	372	657	100%	100%	100%

1 df, $X^2 = 16.80$, $p < .001$
phi = .16

1 df, $X^2 = 17.19$, $p < .001$
gamma = .32

Table 3. Number of Group B Titles Published in Specified Years and Distributed by the Number of Book Evaluation Tools in Which They Were Found Listed

Year of Publication	Number of Tools 0	1-2	3+	Total	Mean No. of Tools
Part A. Original Data					
1972-76	45	82	100	227	2.34
1967-71	27	66	112	205	2.70
1962-66	20	56	133	209	2.98
1952-61	29	33	116	178	2.91
1932-51	6	28	94	128	3.30
To 1931	14	10	32	56	2.59
Total	141	275	587	1003	2.78
Median:	1967	1967	1964	1965	
Part B. Column Percentages					
1972-76	32%	30%	17%	23%	
1967-71	19	24	19	20	
1962-66	14	20	23	21	
1952-61	21	12	20	18	
1932-51	4	10	16	13	
To 1931	10	4	5	6	
Total	100%	100%	100%	100%	
Part C. Row Percentages					
1972-76	20%	36	44	100%	
1967-71	13%	32	55	100%	
1962-66	10%	27	64	100%	
1952-61	16%	19	65	100%	
1932-51	5%	22	73	100%	
To 1931	25%	18	57	100%	
	14%	27	59	100%	

Part D. Reduced to Two Rows and Two Columns

	0-2	3+	Total	0-2	3+	Total
1967-76	220	212	432	53%	36%	43%
To 1966	196	375	571	47	64	57
Total	416	587	1003	100%	100%	100%

1 df, $X^2 = 27.7$, $p < .001$
phi = .16

1 df, $X^2 = 28.71$, $p < .001$
gamma = .33

Table 4. Number of Group C Titles Published in Specified Years and Distributed by the Number of Book Evaluation Tools in Which They Were Found Listed

Year of Publication	Number of Tools 0	1-2	3+	Total	Mean No. of Tools
Part A. Original Data					
1972-76	62	116	130	308	2.10
1967-71	71	174	168	413	2.12
1962-66	57	136	208	401	2.39
1952-61	45	104	160	309	2.38
1932-51	29	62	119	210	2.50
To 1931	82	60	49	191	1.41
Total	346	652	834	1832	2.19
Median:	1964	1966	1963	1965	
Part B. Column Percentages					
1972-76	18%	18%	16%	17%	
1967-71	21	27	20	23	
1962-66	16	21	25	22	
1952-61	13	16	19	17	
1932-51	8	10	14	11	
To 1931	24	9	6	10	
Total	100%	100%	100%	100%	
Part C. Row Percentages					
1972-76	20%	38	42	100%	
1967-71	17%	42	41	100%	
1962-66	14%	34	52	100%	
1952-61	15%	34	52	100%	
1932-51	14%	30	57	100%	
To 1931	43%	31	26	100%	
Total	19%	36	46	100%	

Part D. Reduced to Two Rows and Two Columns

	0-2	3+	Total	0-2	3+	Total
1967-76	423	298	721	42%	36%	39%
To 1966	575	536	1111	58	64	61
Total	998	834	1832	100%	100%	100%

1 df, $X^2 = 8.16$, $p < .01$
phi = .07

1 df, $X^2 = 6.96$, $p = .01$
gamma = .13

Table 5. Number of Group D Titles Published in Specified Years and Distributed by the Number of Book Evaluation Tools in Which They Were Found Listed

Year of Publication	Number of Tools 0	1-2	3+	Total	Mean No. of Tools
Part A. Original Data					
1972-76	130	233	223	586	2.09
1967-71	144	305	297	746	2.18
1962-66	73	197	268	538	2.50
1952-61	79	181	280	540	2.53
1932-51	64	96	205	365	2.58
To 1931	105	104	104	313	1.80
Total	595	1116	1377	3088	2.29
Median	1965	1966	1963	1965	
Part B. Column Percentages					
1972-76	22%	21%	16%	19%	
1967-71	24	27	22	24	
1962-66	12	18	19	17	
1952-61	13	16	20	17	
1932-51	11	9	15	12	
To 1931	18	9	8	10	
Total	100%	100%	100%	100%	
Part C. Row Percentages					
1972-76	22%	40	38	100%	
1967-71	19%	41	40	100%	
1962-66	14%	37	50	100%	
1952-61	15%	34	52	100%	
1932-51	18%	26	56	100%	
To 1931	34%	33	33	100%	
Total	19%	36	45	100%	

Part D. Reduced to Two Rows and Two Columns

	0-2	3+	Total	0-2	3+	Total
1967-76	812	520	1332	47%	38%	43%
To 1966	899	857	1756	53	62	57
Total	1711	1377	3088	100%	100%	100%

1 df, X^2 = 28.85, p < .001
phi = .10

1 df, X^2 = 25.21, p < .001
gamma = 0.18

Whatever association there is in these data between publication date and the number of evaluation tools in which titles are listed, it applies to all four size groups of library with only minor variations. The biggest single difference between size groups occurs in the case of books found in 0-2 tools; 53% of such titles held by Group B libaries had been published in the previous 10 years compared with 42% of those held by Group C libraries; the average difference between the other size groups for 0-2 tools was 4.6 percentage points; and between all size groups for 3-8 tools, it was 3.

Sec. 2. Number of Copies and Number of Tools

A second main question asked of these data is whether there is a statistically significant association between the number of copies and the distribution of these titles by the number of book evaluation tools in which they were found listed. Table 6 shows the overall results for all 20 libraries. As in Table 1, there are no empty cells; the mean number of tools (last column) increases for titles with one to four copies, and then moves down again to an even lower level for over 20 copies than for one; the median number of copies for each number of tools is one, except that titles found in 6 to 8 tools have a median of two; the largest concentration of numbers is in the upper left corner, and the total of the bottom three rows in the last two columns is less than that for the bottom three rows in the first two columns and than that for the first three rows in the last two columns (1:2.5 and 1:3.9). It appears that there is a tendency for the number of copies to increase as titles are found in more tools. When we reduce the data in Part A of Table 6 to 2 X 2 form (Part D), the distribution shown differs significantly from what chance alone would occasion, but the strength of the relationship is minimal.

When we look at the relationship between the quality of titles and the number of copies in the four population size groups (Tables 7-10), Group A (the

Table 6. Number of Titles Found in Designated Number of Book Evaluation Tools and Distributed by Number of Copies Held

No. of Copies	Number of Book Evaluation Tools								Mean No. of Tools
	0	1	2	3	4	5	6-8	Total	
Part A. Original Data									
1	731	563	705	771	563	289	127	3749	2.31
2	146	125	157	191	140	73	44	876	2.54
3	58	56	101	106	71	44	23	459	2.65
4	23	27	41	51	32	24	15	213	2.82
5	29	24	40	37	28	17	7	182	2.49
6-10	55	61	71	82	59	56	23	407	2.57
11-20	64	67	68	90	56	28	21	394	2.44
21-95	77	60	68	59	39	18	7	328	2.02
Total	1183	983	1251	1387	988	549	267	6608	2.41
Median	1	1	1	1	1	1	2	1	

Note: Excludes 14 titles for which the number of copies is not known.

Part B. Column Percentages

	0	1-2	3-8	Total
1	62%	57%	55%	57%
2	12	13	14	13
3-5	9	13	14	13
6-10	5	6	7	6
11-20	5	6	6	6
21+	7	6	4	5
Total	100%	100%	100%	100%

Part C. Row Percentages

1	19%	34	47	100%
2	17%	32	51	100%
3-5	13%	34	53	100%
6-10	14%	32	54	100%
11-20	16%	34	49	100%
21+	23%	39	38	100%

Part D. Reduced to Two Rows and Two Columns

	0-2	3	Total	0-2	3	Total
1	1999	1750	3749	59%	55%	57%
2+	1418	1441	2859	41	45	43
Total	3417	3191	6608	100%	100%	100%

1 df, $X^2 = 8.86$, $p < .01$
phi = .04

1 df, $X^2 = 10.78$, $p = .001$
gamma = .08

Table 7. Number of Group A Titles Found in Designated Number of Book Evaluation Tools and Distributed by Number of Copies Held

No. of Copies	No. of Book Evaluation Tools 0	1-2	3+	Total	Mean No. of Tools
Part A. Original Data					
1	84	186	347	617	2.81
2	8	9	26	43	} 2.98
3-5	-	-	5	5	
Total	92	195	378	665	2.82
Median:	1	1	1	1	
Part B. Column Percentages					
1	91%	95%	92%	93%	
2	9	5	7	6	
3-5	-	-	1	1	
Total	100%	100%	100%	100%	
Part C. Row Percentages					
1	14%	30	56	100%	
2	19%	21	60	100%	
3-5	-	-	100	100%	
Total	14%	29	57	100%	

Part D. Reduced to Two Rows and Two Columns

	0-2	3+	Total	0-2	3+	Total
1	270	347	617	94%	92%	93%
2+	17	31	48	6%	8	7
Total	287	378	665	100%	100%	100%

1 df, $X^2 = 0.95$, $p = .77$ 1 df, $X^2 = 1.02$, $p. = .30$

Table 8. Number of Group B Titles Found in Designated Number of Book Evaluation Tools and Distributed by Number of Copies Held

No. of Copies	No. of Book Evaluation Tools 0	1-2	3+	Total	Mean No. of Tools
Part A. Original Data					
1	133	228	461	822	2.69
2	6	26	91	123	3.31
3-5	5	22	37	64	} 2.91
6+	-	-	2	2	
Total	144	276	591	1011	2.78
Median:	1	1	1	1	
Part. B. Column Percentages					
1	92%	83%	78%	81%	
2	4	9	15	12	
3-5	3	8	6	6	
6+	-	-	*	*	
Total	100%	100%	100%	100%	
Part C. Row Percentages					
1	16%	28	56	100%	
2	5%	21	74	100%	
3-5	8%	34	58	100%	
6+	-	-	100	100%	
Total	14%	27	58	100%	

* 0.5 or less

Part D. Reduced to Two Rows and Two Columns

	0-2	3+	Total	0-2	3+	Total
1	361	461	822	86%	78%	81%
2+	59	130	189	14	22	19
Total	420	591	1011	100%	100%	100%

1 df, $X^2 = 9.69$, $p < .01$
phi = .10

1 df, $X^2 = 10.28$, $p = .001$
gamma = .27

Table 9. Number of Group C Titles Found in Designated Number of Book Evaluation Tools and Distributed by Number of Copies Held

No. of Copies	No. of Book Evaluation Tools 0	1-2	3+	Total	Mean No. of Tools
Part A. Original Data					
1	295	512	622	1429	2.12
2	33	65	100	198	2.32
3-5	14	59	86	159	2.52
6-10	5	11	22	38	2.53
11+	1	3	5	9	2.56
Total	348	650	835	1833	2.19
Median:	1	1	1	1	
Part B. Column Percentages					
1	85%	79%	74%	78%	
2	9	10	12	11	
3-5	4	9	10	9	
6-10	1	2	3	2	
11+	*	*	1	*	
Total	100%	100%	100%	100%	

* 0.5 or less

Part C. Row Percentages				
1	21%	36	44	100%
2	17%	33	51	100%
3-5	9%	37	54	100%
6-10	13%	29	58	100%
11+	11%	33	56	100%
Total	19%	35	46	100%

Part D. Reduced to Two Rows and Two Columns

	0-2	3+	Total	0-2	3+	Total
1	807	633	1429	81%	74%	78%
2+	191	213	404	19	26	22
Total	998	835	1833	100%	100%	100%

1 df, X^2 = 10.37, p = .001
phi = .08

1 df, X^2 = 13.14, p < .001
gamma = .20

Table 10. Number of Group D Titles Found in Designated Number of Book Evaluation Tools and Distributed by Number of Copies Held

No. of Copies	No. of Book Evaluation Tools				Mean No. of Tools
	0	1-2	3+	Total	
Part A. Original Data					
1	219	342	320	881	2.01
2	99	182	231	512	2.30
3-5	91	208	327	626	2.54
6-10	50	121	197	368	2.58
11-20	63	132	189	384	2.44
21+	77	128	123	328	2.06
Total	599	1113	1387	3099	2.29
Median:	2	3	3	3	
Part B. Column Percentages					
1	37%	31%	23%	28%	
2	17	16	17	17	
3-5	15	19	24	20	
6-10	8	11	14	12	
11-20	11	12	14	12	
21+	13	12	9	11	
Total	100%	100%	100%	100%	
Part C. Row Percentages					
1	25%	39	36	100%	
2	19%	36	45	100%	
3-5	15%	33	52	100%	
6-10	14%	33	54	100%	
11-20	16%	34	49	100%	
21+	23%	39	38	100%	
Total	19%	36	45	100%	

Part D. Reduced to Two Rows and Two Columns

	0-2	3+	Total	0-2	3+	Total
1	561	320	881	33%	23%	28%
2+	1151	1067	2218	67	77	72
Total	1712	1387	3099	100%	100%	100%

1 df, $X^2 = 34.94$, $p < .001$
phi = .11

1 df, $X^2 = 38.43$, $p < .001$
gamma = .24

smallest libraries) has a distribution which could occur solely by chance fluctuations in sampling. Groups B to D have statistically significant differences but with low to medium measures of strength of association. Phi squared is never more than 2%, and gamma does not exceed .27. As with the relationship between quality and publication date, that between quality and number of copies is also seen to be faint but definite. The number of titles for which multiple copies were held is a function of size--7% in Group A, 19% in Group B, 22% in Group C, and 72% in Group D. The percentage of titles found listed in 3 to 8 tools is 65%, 69%, 53%, and 48% respectively, of all titles in these size groups which had more than one copy each.

Sec. 3. Dewey Decimal Classification and Number of Copies

Does the number of copies per title show any marked differences in the various subject areas? The relevant data for all 20 libraries are shown in Table 11. Part C converts row data into row percentages, and reveals a remarkable similarity between all seven main classes and the four largest sub-classes. The biggest differences come in class 291, comparative religion, where only 29 titles were involved. The next biggest differences are in the 700's with a higher percentage of single copy titles and smaller percentages of titles with multiple copies; the high cost of art books may explain this. Of the four largest sub-classes, the 810's have a higher than average number of copies per title and the 970's a lower than average number (see also the last column of Part A of Table 11).

Tables 12-15 present similar data for each of the four size groups of libraries. It will be seen that Group D libraries (Table 15) manifest all three of the differences noted above, more so than the other three size groups of libraries; in other words if one compares Groups A, B, and C, one would find no major difference in the number of copies per title in these 11 classes. The over-all average number of copies per title in these selected Dewey classes is 1.1, 1.3, and 1.5 in Groups A, B, and C, but is 6.7 in Group D.

Table 11. Number of Titles in Each Main Dewey Decimal Class for Which Specified Number of Copies Were Held

Dewey Decimal Class*	Number of Copies									Mean of Class
	1	2	3	4	5	6-10	11-20	21+	Total	
Part A. Original Data										
100-199	190	52	28	7	7	14	30	9	337	3.6
291	14	2	3	-	2	3	4	1	29	4.8
340-49	178	43	19	14	10	14	18	17	313	3.8
400-499	168	32	14	4	7	16	22	11	274	3.8
700-799	425	80	30	16	11	25	48	24	659	3.4
800-899	1609	388	202	104	73	179	168	175	2898	4.0
900-999	1165	279	163	68	72	156	104	91	2098	3.6
Total	3749	876	459	213	182	407	394	328	6608	3.8
810-19	605	143	87	44	37	75	87	75	1153	4.4
820-29	441	114	62	23	8	49	38	45	770	3.9
940-49	399	99	60	21	20	52	50	40	741	4.2
970-79	452	108	70	28	36	61	29	13	797	2.9

*These are the general class numbers; see p. 1 above for more precise definitions.

Note: Excludes 14 titles for which the number of copies is not known.

Part B. Column Percentages

	1	2-5	6+	Total
100-199	5%	5%	5%	5%
291	*	*	1	*
340-49	5	5	4	5
400-499	4	3	4	4
700-799	11	8	9	10
800-899	43	44	46	44
900-999	31	34	31	32
Total	100%	100%	100%	100%
810-19	16	18	21	17
820-29	12	11	12	12
940-49	11	12	13	11
970-79	12	14	9	12

*0.5 or less

Part C. Row Percentages

	1	2-5	6+	Total
100-199	56%	28	16	100%
291	48%	24	28	100%
340-49	57%	27	16	100%
400-499	61%	21	18	100%
700-799	64%	21	15	100%
800-899	56%	26	18	100%
900-999	56%	28	17	100%
Total	57%	26	17	100%
810-19	52%	27	21	100%
820-29	57%	26	17	100%
940-49	54%	27	19	100%
970-79	57%	30	12	100%

Table 12. Number of Group A Titles in Each Main Dewey Decimal Class for Which Specified Number of Copies Were Held

Dewey Decimal Class	Number of Copies 1	2-5	Total	Mean of Class
Part A. Original Data				
100-199	33	2	35	1.1
291	2	-	2	1.0
340-49	30	-	30	1.0
400-499	21	1	22	1.0
700-799	44	2	46	1.0
800-899	252	25	277	1.1
900-999	235	18	253	1.1
Total	617	48	665	1.1
810-19	121	11	132	1.1
820-29	58	6	64	1.1
940-49	70	7	77	1.1
970-79	107	9	116	1.1

	Part B. Column Percentages			Part C. Row Percentages		
	1	2-5	Total	1	2-5	Total
100-199	5%	4%	5%	94%	6	100%
291	*	-	*	100%	-	100%
340-49	5	-	5	100%	-	100%
400-499	3	2	3	95%	5	100%
700-799	7	4	7	96%	4	100%
800-899	41	52	42	91%	9	100%
900-999	38	38	38	93%	7	100%
Total	100%	100%	100%	93%	7	100%
810-19	20	23	20	92%	8	100%
820-29	9	12	10	91%	9	100%
940-49	11	15	12	91%	9	100%
970-79	17	19	17	92%	8	100%

* 0.5 or less

Table 13. Number of Group B Titles in Each Main Dewey Decimal Class for Which Specified Number of Copies Were Held

Dewey Decimal Class	Number of Copies 1	2-5	6+	Total	Mean of Class
Part A. Original Data					
100-199	36	5	-	41	1.2
291	5	2	-	7	1.4
340-49	39	6	-	45	1.2
400-499	40	2	-	42	1.1
700-799	73	4	-	77	1.1
800-899	337	97	-	434	1.3
900-999	292	71	2	365	1.3
Total	822	187	2	1011	1.3
810-19	126	35	-	161	1.3
820-29	122	43	-	165	1.4
940-49	96	23	-	119	1.3
970-79	117	30	2	149	1.4

	Part B. Column Percentages				Part C. Row Percentages			
	1	2-5	6+	Total	1	2-5	6+	Total
100-199	4%	3%	-	4%	88%	12%	-	100%
291	1	11	-	1	71%	29	-	100%
340-49	5	3	-	4	87%	13	-	100%
400-499	5	1	-	4	95%	5	-	100%
700-799	9	2	-	8	95%	5	-	100%
800-899	41	52	-	43	78%	22	-	100%
900-999	36	38	100%	36	80%	19	1	100%
Total	100%	100%	100%	100%	81%	18	*	100%
810-19	15	19	-	16	78%	22	-	100%
820-29	15	23	-	16	74%	26	-	100%
940-49	12	12	-	12	81%	19	-	100%
970-79	14	16	-	15	79%	20	1	100%

* 0.5 or less

Table 14. Number of Group C Titles in Each Main Dewey Decimal Class for Which Specified Number of Copies Were Held

Dewey Decimal Class	Number of Copies 1	2-5	6+	Total	Mean of Class
Part A. Original Data					
100-199	78	25	-	41	1.4
291	6	2	-	8	1.4
340-49	71	20	1	92	1.5
400-499	65	13	3	81	1.6
700-799	185	37	4	227	1.4
800-899	657	165	21	843	1.5
900-999	366	95	18	479	1.6
Total	1429	357	47	1833	1.5
810-19	234	75	10	319	1.6
820-29	151	30	4	185	1.4
940-49	132	31	4	167	1.5
970-79	140	37	13	192	1.8

	Part B. Column Percentages				Part C. Row Percentages			
	1	2-5	6+	Total	1	2-5	6+	Total
100-199	5%	7%	-	6%	76%	24	-	100%
291	*	1	-	*	75%	25	-	100%
340-49	5	6	2%	5	77%	22	1	100%
400-499	5	4	6	4	80%	16	4	100%
700-799	13	10	9	12	82%	16	2	100%
800-899	46	46	45	46	78%	20	2	100%
900-999	26	27	38	26	76%	20	4	100%
Total	100%	100%	100%	100%	78%	19%	3%	100%
810-10	16	21	21	17	73%	24	3	100%
820-29	11	8	9	10	82%	16	2	100%
940-49	9	9	9	9	79%	19	2	100%
970-79	10	10	28	10	73%	19	7	100%

*0.5 or less

Table 15. Number of Group D Titles in Each Main Dewey Decimal Class for Which Specified Number of Copies Were Held

Dewey Decimal Class	Number of Copies 1	2-5	6+	Total	Mean of Class
Part A. Original Data					
100-199	43	62	53	158	6.6
291	1	3	8	12	11.0
340-49	38	60	48	146	6.5
400-499	42	41	46	129	6.7
700-799	122	94	93	309	5.9
800-899	363	480	501	1344	7.0
900-999	272	394	334	1001	6.5
Total	882	1134	1083	3099	6.7
810-19	124	190	227	541	7.7
820-29	110	118	128	356	6.8
940-49	101	139	138	378	6.9
970-79	88	162	92	342	5.8

	Part B. Column Percentages				Part C. Row Percentages			
	1	2-5	6+	Total	1	2-5	6+	Total
100-199	5%	5%	5%	5%	27%	39	34	100%
291	*	*	1	*	8%	25	67	100%
340-49	4	5	4	5	26%	41	33	100%
400-499	5	4	4	4	33%	32	36	100%
700-799	14	8	9	10	39%	30	30	100%
800-899	41	42	46	43	27%	36	37	100%
900-999	31	35	31	32	27%	39	33	100%
Total	100%	100%	100%	100%	28%	37%	35%	100%
810-19	14	17	21	17	23%	35	42	100%
820-29	12	10	12	11	31%	33	36	100%
940-49	11	12	13	12	27%	37	37	100%
970-79	10	14	8	11	26%	47	27	100%

* 0.5 or less

Sec. 4. Dewey Decimal Classification and Each Main Book Evaluation Tool

The final question we sought to answer in this further analysis of the augmented data from the earlier study is a methodological one, viz, how did each of the main book evaluation tools compare with the others in the several Dewey decimal classes? Table 16 shows for each of seven tools how many titles it listed for each of 11 Dewey classes, for all 20 libraries combined. Clearly there is great variation. The first three tools (Book Review Digest, Booklist, and Library Journal) listed an average of 50% of the 6622 titles, but with an average of 36 points between their highest and lowest percentages by Dewey decimal class. Public Library Catalog and Books for College Libraries are book selection tools; they listed an average of 29% of all 6622 titles, and had an average spread of 18 points between their highest and lowest percentages by Dewey decimal class. These first five tools are all about equal in the percentage distribution by Dewey decimal classes of the titles found in each. Reader's Adviser is obviously different, with a concentration in literature and a gap of 54 points between the highest and lowest percentage of titles by Dewey class. Guide to Historical Reading is a retrospective bibliography in one main subject field.

The last column of Table 16 shows a spread from 1.1 to 2.6 average number of listings per title in the seven main Dewey classes; four classes (100's, 291, 340, and 700's) are between 1.7-1.9 average listings, two others (800's and 900's) are at 2.6, and the four main sub-classes (810, 820, 940, 970) are between 2.4 and 2.9 and together have 52% of all 6622 titles. The first three tools are reasonably comparable in the percentage distribution of listed titles of these sub-classes; and the Book Review Digest had 75% of all titles in 940-49, the highest percentage of any tool for any class. Books for College Libraries is next strongest in these four sub-classes, with Public Library Catalog far behind. Reader's Adviser is seen to be stronger in English than in American literature (with a higher

Table 16. Number of Titles Found Listed in Each of Seven Book Evaluation Tools, for Each Main Dewey Decimal Class/Percent of All Titles in That Class in All Twenty Libraries

Dewey Decimal Class*	Total No. of Titles	Book Review Digest	Booklist	Library Journal	Public Library Catalog	Books for College Libraries	Reader's Adviser	Guide to Historical Reading	Number of Listings Total/Mean
100-199	337	163/48%	104/31%	147/44%	52/15%	125/37%	20/6%	-	611/1.8
291	29	10/34	9/31	14/48	7/24	8/28	2/7	-	50/1.7
340-49	315	156/50	109/35	168/53	32/10	79/25	31/10	-	575/1.8
400-499	275	70/25	54/20	70/25	38/14	64/23	15/5	-	311/1.1
700-799	661	309/47	226/34	359/54	71/11	243/37	58/9	-	1266/1.9
800-899	2903	1603/55	1292/45	1404/48	611/21	1367/47	1211/59	-	7488/2.6
900-999	2102	1382/66	1116/53	1258/60	282/13	768/37	165/8	439/21	5410/2.6
Total	6622	3693/56%	2910/44%	3420/52%	1093/17%	2654/40%	1502/23	439/7%	15,711/2.4
810-19	1156	676/58%	568/49%	624/54%	256/22%	495/43%	624/54%	-	3243/2.8
820-29	770	430/56	321/42	358/46	198/26	437/57	500/65	-	2244/2.9
940-49	743	554/75	414/56	457/62	82/11	265/36	59/8	178/24	2009/2.7
970-79	799	464/58	405/51	447/56	113/14	281/35	64/8	173/22	1947/2.4
Sub-total	3468	2124/61%	1708/49%	1886/54%	649/19%	1478/43%	1247/36%	351/10%	9443/2.7

*These are the general class numbers, see p. 1 above for more precise definitions.

Book Review Digest: 1905-76
Library Journal: 1907-76
Booklist: 1905-76
Public Library Catalog: 1-6th editions (1934-73) and supplements to 6th edition
Books for College Libraries: 1st and 2nd editions, 1967-75, supplemented by Choice for titles published after 1972
Reader's Adviser: 1-12th editions (1921-77)
Guide to Historical Reading, Non-Fiction: 8-10th editions (1964-76)

percentage than was found in any other tool), and Guide for Historical Reading about equally strong in European and American History. Apparently these seven book evaluation tools are complementary to each other in general, rather than duplicative.

Footnotes

(1) Herbert Goldhor, A Study of Public Library Book Collections in the Humanities (revised final report: University of Illinois Library Research Center, Jan. 1979) 40 p., in Resources in Education 15 (April 1980) 77 (ED 179-189). Summarized in "US Public Library Adult Non-Fiction Book Collections in the Humanities," Collection Management 3 (Spring 1979) 31-43.

(2) For a further description of this method of measuring quality, see Herbert Goldhor, "Analysis of an Inductive Method of Evaluating the Book Collection of a Public Library," Libri 23 (1973) 6-7, and "A Report on an Application of the Inductive Method of Evaluation of Public Library Books," Libri 31 (1981) 121-29.

(3) For the raw data, we used Siegel's formula; Sidney Siegel, Nonparametric Statistics for the Behavioral Sciences (McGraw-Hill, 1956) p. 107 (and for phi) p. 226. For the chi-square formula for percentages, see Kenneth D. Hopkins, "Chi-Square Tests of Association and Goodness of Fit from Proportions and Percentages," Journal of Experimental Education 47 (Summer 1979) p. 352-55. For phi and gamma, see Herbert M. Blalock, Jr., Social Statistics (2d ed., McGraw-Hill, 1972) p. 295-96, 298-99, and 424, and Jacob Cohen, Statistical Power Analysis for the Behavioral Sciences (rev. ed.; Academic Press, 1977) p. 221-24. Phi and gamma have a range from zero to one, in the case of 4-cell tables.